vegetable intake was measured using a validated food frequency questionnaire that was administered at baseline in each study. Multivariate models included total energy intake, body mass index, smoking status, physical activity, age at menarche, oral contraceptive use, parity, menopausal status and use of post-menopausal hormones. We also evaluated whether associations differed by histological type of epithelial ovarian cancer. **Results:** Among 620,480 women, 1,988 cases of epithelial ovarian cancer occurred during a follow-up of 6 to 20 years across studies. Median fruit consumption ranged from 166 to 355 g/day while median vegetable consumption was from 77 to 258 g/day across studies. Total fruit consumption was not significantly associated with ovarian cancer risk - the pooled multivariate RR for the highest versus the lowest quartile of total fruit intake was 1.08 (95% confidence interval (CI) 0.94-1.24, p-value, test for trend=0.46, p-value, test for heterogeneity=0.56). Results for total vegetable intake (not including consumption of potatoes and mature beans) were more suggestive of a protective association with ovarian cancer though not statistically significant (multivariate RR=0.90, 95% CI 0.77-1.06, for the highest versus the lowest quartile, p-value, test for trend=0.08, p-value, test for heterogeneity=0.20). Individual fruits and vegetables were not found to be significantly associated with ovarian cancer risk. In addition, associations for total fruits and vegetables did not differ according to histological types. **Discussion:** In this pooled analysis of prospective studies, no association between fruit and vegetable consumption and the risk of epithelial ovarian cancer risk was observed.

#C72 Dairy Products and Ovarian Cancer: A Pooled Analysis of 12 Cohort Studies. Jeanine M. Genkinger, Stephanie Smith-Warner for the Pooling Project of Prospective Studies of Diet and Cancer Investigators. Harvard School of Public Health, Boston, MA.

Background: Due to the large international variation in incidence rates of ovarian cancer, diet has been suggested as a possible risk factor. Dairy foods and their constituents (lactose and calcium) have been hypothesized to promote ovarian cancer. Higher levels of lactose may affect the ovary and ovarian-pituitary axis through its metabolites (galactose and galactose-1-phosphate uridyl transferase). Galactose stimulates gonadotropic secretion that may result in toxicity to oocytes and thus may lead to ovarian failure and ultimately cancer. Higher intakes of calcium are theorized to downregulate the production of parathyroid hormone which may trigger mitosis and reduce apoptosis. Although case-control studies have reported conflicting results for dairy foods, calcium and lactose, the prospective Iowa Women's Health Study and Nurses' Health Study have both shown positive associations between skim milk, lactose and ovarian cancer. Furthermore, Nurses' Health Study found higher risk of serous ovarian cancer with higher intake of lactose. **Methods:** A pooled analysis of the primary data from 12 prospective cohort studies based in North America and Western Europe was conducted. To be included, each study needed a minimum of 50 ovarian cancer cases, an assessment of usual food and nutrient intake and a validation of the dietary assessment tool. The total study population consisted of 620,480 women among whom 1,988 epithelial ovarian cases were confirmed by medical record or death certificate. Cox proportional hazards models and 95% confidence intervals were calculated for each individual study, and study-specific relative risks were pooled using a random effects model. Multivariate relative risks were adjusted for age, age at menarche, menopausal status, oral contraceptive use, hormone replacement therapy, parity, body mass index, smoking status, physical activity and energy intake, modeled identically across studies. **Results:** Daily mean intakes for the cohorts ranged from 137.5g to 418.9g for milk, 5.7g to 42.0g for cheese, 11.6g to 103.5g for yogurt, 718.3mg to 913.3mg for dietary calcium, 730.7mg to 1184.6mg for total calcium, and 11.31g to 21.9g for lactose. No statistically significant associations were observed with ovarian cancer risk and dairy foods (pooled multivariate RR for 250 g/d increment of milk = 1.03, 95% CI: 0.97-1.09; pooled multivariate RR for 30g/d increment of cheese = 0.97, 95% CI: 0.92-1.03; pooled multivariate RR for 55g/d increment of yogurt= 0.98, 95% CI: 0.94-1.02). Likewise, no association with ovarian cancer was observed for dietary calcium (pooled multivariate RR = 1.08, 95% CI: 0.90-1.29, p-value, test for trend=0.31), total calcium (includes intake from supplement) intake (pooled multivariate RR = 1.03, 95% CI: 0.86-1.23, p-value, test for trend=0.57) or lactose intake (pooled multivariate RR = 1.02, 95% CI: 0.86-1.20, p-value, test for trend = 0.23) comparing the highest to the lowest quintile of intake. When examining specific subtypes (serous, mucinous, endometrioid) of ovarian cancer, results were similar to the overall findings. No statistically significant heterogeneity between studies was observed for the analyses presented. **Discussion:** Overall, no statistically significant association was observed for dairy foods, calcium or lactose intakes and ovarian cancer risk.

#C73 Fruit and vegetable intake and prevalent colorectal adenoma. Amy E. Millen,[1] Amy F. Subar,[1] Barry I. Graubard,[2] Ulrike Peters,[3] Richard b. Hayes,[2] Joel L. Weissfeld,[4] Lance Yokochi,[5] Regina G. Ziegler.[2] Division of Cancer Control and Population Sciences, National Cancer Institute,[1] Bethesda, MD, Division of Cancer Epidemiology and Genetics, National Cancer Institute,[2] Bethesda, MD, Fred Hutchinson Cancer Research Center,[3] Seattle, WA, University of Pittsburg,[4] Pittsburg, PA, Pacific Health Research Institute,[5] Honolulu, HI.

Background: Fruit and vegetables have been hypothesized to reduce the risk of colorectal cancer because they contain dietary fiber, folate, antioxidants, and various other potentially anticarcinogenic phytochemicals. Although the protective role of these foods has been generally supported by case-control studies, several recent large prospective studies and randomized controlled trials have produced conflicting results. Additional investigations of diet and colorectal cancer and its precursor condition, colorectal adenoma, are needed to elucidate these relationships and to develop prudent public health recommendations for colorectal cancer prevention. **Methods:** Within a randomized, controlled trial of cancer detection methods conducted at 10 U.S. centers, we compared 3,707 cases that had at least one histologically-verified adenoma in the distal large bowel (descending colon, sigmoid colon, or rectum) with 34,853 men and women who were endoscopy-negative for left-sided polyps at baseline (between September 1993 and September 2000). A detailed 137-item food frequency questionnaire was administered to assess fruit and vegetable intake, which we quantified as both *frequency* and *pyramid servings per day. Frequencies* are the sum of daily frequency reports of line items on the questionnaire. *Pyramid servings* include all sources of fruits and vegetables queried on the questionnaire, including mixed dishes and processed foods, and are calculated using food frequency reports and portion sizes. Units for *pyramid servings* are the portion sizes recommended by the U.S. Department of Agriculture's Food Guide Pyramid. Ours is one of the first epidemiologic studies to use pyramid servings to investigate dietary associations. All estimates of food intake were energy-adjusted using the residual method. Odds ratios (ORs) and 95% confidence intervals (95% CIs) were estimated by logistic regression models and adjusted for age at screening, sex, study center, race, education, family history of colon cancer, physical activity, body mass index, hormone replacement therapy, and tobacco, alcohol, ibuprofen, and aspirin use. **Results:** Subjects in the highest quintile of total fruits and vegetables (median *pyramid servings/day*= 12.2) had a 19% lower risk (OR=0.81, 95% CI 0.72-0.91, p for trend<0.0001) of distal adenoma relative to those in the lowest quintile (median *pyramid servings/day*=4.7). Similar results between extreme quintiles were found if fruits and vegetables were measured as *frequency/day* (OR=0.84, 95% CI 0.75-0.94, p for trend=0.0001). Total fruit intake (*pyramid servings/day*) was significantly associated with reduced risk for adenoma (comparing extreme quintiles, OR=0.77, 95% CI 0.68-0.86, p for trend<0.0001), but total vegetable intake was not (OR=0.94, 95% CI 0.84-1.05, p for trend=0.17). However, a significantly reduced risk of adenoma was seen for high versus low intake (*pyramid servings/day*) of deep yellow vegetables and dark green vegetables, as well as fresh fruit, fruit juice, citrus/melon/berries, citrus fruits, and other fruits. We are currently investigating whether results vary for advanced adenoma and comparing the relative contributions of dietary fiber, folate, calcium, and red meat to the fruit and vegetable effect. **Conclusion:** Greater intake of fruits and some vegetables, particularly deep yellow and dark green vegetables, is significantly associated with decreased risk for colorectal adenoma. *Pyramid servings*, a more comprehensive and quantitative approach to estimating food group intake, did not produce substantially different results than the more traditional *frequency/day*.

#C74 Dietary fat intake and risk of postmenopausal breast cancer in a twenty-year follow-up. Esther H. Kim,[1] Walter C. Willett,[1] Michelle D. Holmes.[2] Harvard School of Public Health,[1] Boston, MA, Harvard Medical School,[2] Boston, MA.

Background: Dietary fat in midlife has not been associated with breast cancer risk in most studies, but few have followed women beyond one decade. In addition, the association of premenopausal fat